

Head for Perpendicular Recording with a Floating-Trailing Shield

Abstract

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Heads for perpendicular recording using a floating-trailing shield as part of the magnetic circuit for writing magnetic domains in the recording media are described. The floating-trailing shield is separated from the main pole piece by a layer of non-magnetic material along its entire length and the air bearing surface of the floating-trailing shield is substantially larger than that of the main pole piece. The reluctance between the trailing shield and the underlayer in the recording medium is made so low that both are at the same magnetomotive force (or potential), so that no direct connection is needed between the floating-trailing shield and the yoke. When the head is used in a storage system with a magnetic recording medium with a soft underlayer, the floating-trailing shield is, in effect, magnetically shorted to the return pole piece during recording. In a second embodiment of the invention the floating-trailing shield extends around the sides of the main pole piece to reduce the off-track magnetic field.

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